EPA

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 21, 2012

MR CRAIG R ECKBERG
SR MANAGER ENVIRONMENTAL BUSINESS
NRG TEXAS POWER LLC
1201 FANNIN ST
HOUSTON TX 77002-6929

Re: Permit Application
Permit Numbers: 98664, N138, and PSDTX1268
W A Parish FGCC Demonstration Project
Thompsons, Fort Bend County
Regulated Entity Number: RN100888312
Customer Reference Number: CN603207218
Account Number: FG-0020-V

Dear Mr. Eckberg:

This is in response to your Form PI-1 (General Application for Air Preconstruction Permits and Amendments) concerning the above-referenced facility.

A permit for your new facility is enclosed. The permit contains several general and special conditions that define the level of operation, a maximum allowable emission rates table (MAERT), and a permit face. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met. In addition, the construction and operation of the facilities must be as represented in the application.

Planned maintenance, startup, and shutdown for the sources identified on the MAERT have been reviewed and included in the MAERT and specific maintenance activities are identified in the permit special conditions. Any other maintenance activities are not authorized by this permit and will need to obtain separate authorization.

This permit will be automatically void upon the occurrence of any of the following, as indicated in Title 30 Texas Administrative Code § 116.120(a) [30 TAC § 116.120(a)]:

1. Failure to begin construction within 18 months of the date of issuance,
2. Discontinuance of construction for more than 18 months prior to completion, or
3. Failure to complete construction within a reasonable time.

Upon request, the executive director may grant extensions as allowed in 30 TAC § 116.120(b).

This permit is effective as of the date of this letter and will be in effect for ten years from the date of approval.

You may file a **motion to overturn** with the Chief Clerk. A motion to overturn is a request for the commission to review the executive director's decision. Any motion must explain why the commission should review the executive director's decision. According to 30 TAC § 50.139, an action by the executive director is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the Chief Clerk within 23 days after the date of this letter. An original and 11 copies of a motion must be filed with the Chief Clerk in person, or by mail to the Chief Clerk's address on the attached mailing list. On the same day the motion is transmitted to the Chief Clerk, please provide copies to the applicant, the executive director's attorney, and the Public Interest Counsel at the addresses listed on the attached mailing list. If a motion to overturn is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the executive director's approval. According to Texas Health and Safety Code § 382.032, a person affected by the executive director's approval must file a petition appealing the executive director's approval in Travis County district court within 30 days after the **effective date of the approval**. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Thank you for your cooperation and interest in air pollution control. If you need further information or have any questions, please contact Mr. Tan Nguyen, P.E. at (512) 239-3445 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Re: Permit Numbers: 98664, N138, and PSDTX1268

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Michael Wilson, P.E., Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

MPW/tn

Enclosure

cc: Air Section Manager, Region 12 - Houston
Air Permits Section Chief, New Source Review, Section (6PD-R), U.S. Environmental Protection Agency, Region 6, Dallas

Project Numbers: 170024, 170186, 170188

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT

A Permit Is Hereby Issued To
NRG Texas Power LLC
Authorizing the Construction and Operation of
FGCC Demonstration Project
Located at **Thompsons, Fort Bend County, Texas**
Latitude 29° 28′ 41″ Longitude 95° 38′ 08″

Permits: 98664, PSDTX1268, and N138

Issuance Date : December 21, 2012

Renewal Date: December 21, 2022

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code 116.116 (30 TAC 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1)the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of $5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC 116.115(b)(2)(B)(iii)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with 30 TAC 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code (THSC) 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.

Special Conditions

Permit Numbers 98664, PSDTX1268, and N138

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," including planned maintenance, startup, and shutdown (MSS) activities, and those sources are limited to the emission limits on that table and other conditions specified in this permit.

2. All sources of air contaminants shall be physically marked in a conspicuous location with the emission point numbers (EPNs) and/or the source names as identified on the maximum allowable emission rates table (MAERT).

Federal Applicability

3. Affected facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources (NSPS), Title 40 Code of Federal Regulations (40 CFR) Part 60:

   A. Subpart A: General Provisions.

   B. Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

   C. Subpart KKKK: Standards of Performance for Stationary Combustion Turbines.

4. Affected facilities shall comply with applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP), 40 CFR Part 63:

   A. Subpart A: General Provisions.

   B. Subpart YYYY: National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines.

   C. Subpart ZZZZ: National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

5. If any condition of this permit is more stringent than the regulations so incorporated, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

Emission Standards and Operating Specifications

6. This permit authorizes a General Electric 7EA combustion turbine (CT), rated at a maximum base-load electric output of approximately 80 megawatts (MW), operating in cogeneration cycle with a heat recovery steam generator (HRSG) with duct burner. Emissions from the combined cycle CT with HRSG duct burner (EPN CTHRSG8) shall not exceed the following concentrations, except during periods of planned MSS activities:

A. Nitrogen oxides (NO_x) - 2 parts per million by volume dry (ppmvd) corrected to 15 percent oxygen (O_2), on a 3-hour rolling average.

B. Carbon monoxide (CO) - 4 ppmvd corrected to 15 percent O_2, on a 24-hour rolling average.

C. Volatile organic compounds (VOC) - 2 ppmvd corrected to 15 percent O_2, on a 3-hour average.

D. Ammonia (NH_3) - 5 ppmvd corrected to 15 percent O_2, on a rolling 24-hour average.

7. The HRSG duct burner shall be limited to a maximum heat input capacity of 225 million British thermal units per hour (MMBtu/hr) based on the high heating value (HHV) of the fuel fired.

8. The 217 horsepower Emergency Generator is limited to 12 hours of operation per year, based on a rolling 12-month period, for non-emergency operation.

9. Fuel shall be limited as follows:

A. Fuel for the CT and HRSG duct burner is limited to pipeline-quality natural gas containing no more than 5 grains total sulfur per 100 dry standard cubic feet (dscf) on an hourly basis and 0.5 grain total sulfur per 100 dscf on an annual basis. The sulfur content shall be monitored pursuant to 40 CFR 60 Subpart KKKK.

B. Fuel fired in the Emergency Generator is limited to diesel containing no more than 15 ppm by weight sulfur.

C. Upon request by representatives of the Texas Commission on Environmental Quality (TCEQ), EPA, or any local air pollution control program having jurisdiction, the permit holder shall provide a sample and/or an analysis of the fuel fired or shall allow air pollution control agency representatives to obtain a sample for analysis.

10. Except during planned MSS activities, the opacity shall not exceed five percent averaged over a six-minute period from the stack (EPN CTHRSG8). During MSS activities, the opacity shall not exceed 15 percent averaged over a six-minute period. Each determination shall be made by first observing for visible emissions while each facility is in operation. Observations shall be made at least 15 feet and no more than 0.25 mile from the emission point. If visible emissions are observed from an emission point, then the opacity shall be determined and documented within 24 hours of observing the visible emissions for that emission point using 40 CFR Part 60, Appendix A, Test Method 9. Contributions from uncombined water shall not be included in determining compliance with this condition. Observations shall be performed and recorded quarterly. If the opacity exceeds five percent during normal operations or 15 percent during MSS

activities, corrective action to eliminate the source of visible emissions shall be taken promptly and documented within one week of first observation.

11. The permit holder is authorized to emit from EPN SCRUB those emissions from EPN WAP8 authorized under Permit Numbers 7704 and PSDTX234M2 that have been rerouted to EPN SCRUB from the existing Unit 8 duct work at a point upstream of the Unit 8 stack and downstream of the Unit 8 air quality control systems. The emissions from EPN SCRUB and EPN WAP8 shall not exceed the combined maximum allowable emission rates for those EPNs authorized under this permit and Permit Numbers 7704 and PSDTX234M2.

12. The permit holder shall adhere to the following operational limitations and monitoring requirements to insure compliance with additional sulfur dioxide reductions and emission limitations in Permit Numbers 7704 and PSDTX234M2 as follows:

    A. The combustion turbine (EPN CTHRSG8) may not fire more than 1,242 million standard cubic feet of natural gas on a 12-month rolling average, unless the demonstration project scrubber system is also operational while the combustion turbine is operational.

    B. The permit holder shall operate the demonstration project scrubber system as represented in the permit application dated September 2011.

    C. The permit holder shall install continuous emissions monitoring system (CEMS) equipment as described in Special Condition No. 20 to ensure that the combined emissions from the rerouted exhaust stream vented through EPN SCRUB combined with the reduced volume flue gas vented through EPN WAP8 do not exceed the emission limits for NO_x and SO_2 identified in the MAERT of Permit Numbers 7704 and PSDTX234M2.

Ammonia Handling

13. The permit holder shall maintain the piping and valves in NH_3 service as follows:

    A. Audio, visual, and olfactory (AVO) checks for NH_3 leaks shall be made once a day.

    B. As soon as possible, following the detection of a leak, plant personnel shall take one or more of the following actions:

        (1) Locate and isolate the leak, if necessary.

        (2) Commence repair or replacement of the leaking component.

        (3) Use a leak collection or containment system to control the leak until repair or replacement can be made if immediate repair is not possible.

Demonstration Unit Solvent Handling: Piping, Valves, Pumps, Agitators, and Compressors - Intensive Directed Maintenance - 28LAER

14. Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);

(2) a written or electronic database or electronic file;

(3) color coding;

(4) a form of weatherproof identification; or

(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code (30 TAC) Chapter 115, shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance.

Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program in accordance with items F thru J of this special condition.

In lieu of the monitoring frequency specified above, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

The percent of connectors leaking used in paragraph B shall be determined using the following formula:

$(Cl + Cs) \times 100/Ct = Cp$

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including non-accessible and unsafe to monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve; or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Non-accessible valves shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown. A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, than the instrument may be calibrated with one of the VOC to be

measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. All new and replacement pumps, compressors, and agitators shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, compressor seals, pump seals, and agitator seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

I. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

J. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable NESHAP, and does not constitute approval of alternative standards for these regulations.

K. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

L. The percent of valves leaking used in paragraph K shall be determined using the following formula:

$(Vl + Vs) \times 100/Vt = Vp$

Where:

Vl = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Vs = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

Vt = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including non-accessible and unsafe to monitor valves.

Vp = the percentage of leaking valves for the monitoring period.

M. Any component found to be leaking by physical inspection (i.e., sight, sound, or smell) shall be repaired or monitored with an approved gas analyzer within 15 days to determine whether the component is leaking in excess of 500 ppmv of VOC. If the component is found to be leaking in excess of 500 ppmv of VOC, it shall be subject to the repair and replacement requirements contained in this special condition.

Planned Maintenance, Startup, and Shutdown

15. The permit holder shall minimize emissions during planned MSS activities by operating the facility and associated air pollution control equipment in accordance with good air pollution control practices, safe operating practices, and protection of the facility.

16. This permit authorizes CT planned combustion optimization maintenance activities, which includes leak and operability checks (e.g., turbine over-speed tests, troubleshooting), balancing, and tuning activities that occur during seasonal tuning or after the completion of initial construction, a combustor change-out, a major repair, maintenance to a combustor, or other similar circumstances. Combustion optimization maintenance activities shall not exceed eight hours per event.

17. This permit authorizes CT planned startup and shutdown activities. Emissions during planned startup and shutdown activities will be minimized by limiting the duration of operation in planned startup and shutdown modes as follows:

A. A startup begins with the ignition of the fuel in the combustion system, as detected by the primary flame scanner, and ends when the CT load reaches 50 percent. A planned startup for the CT is limited to four hours.

B. A shutdown begins when the CT transfers from the premix mode of operation to a lean-lean mode of operation with the intent of shutting the unit down. A planned shutdown for each CT is limited to one hour.

Initial Determination of Compliance

18. Safe sampling ports and platforms shall be incorporated into the design of all exhaust stacks according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director.

19. The permit holder shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from EPNs CTHRSG8 and SCRUB. In addition, the permit holder shall perform stack sampling and other testing if requested by the TCEQ Regional Director to establish the actual quantities of air contaminants being emitted into the atmosphere from EPNs CTHRSG8 and SCRUB. Sampling shall be conducted in accordance with the appropriate

procedures of the TCEQ Sampling Procedures Manual and in accordance with EPA Test Methods or by other equivalent methods approved by the TCEQ Regional Director.

Fuel sampling using the methods and procedures of 40 CFR § 60.4415 may be conducted in lieu of stack sampling for sulfur dioxide (SO_2). If fuel sampling is used, compliance with NSPS Subpart KKKK, SO_2 limits shall be based on 100 percent conversion of the sulfur in the fuel to SO_2. Any deviations from those procedures must be approved by the Executive Director of the TCEQ prior to sampling. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling.

The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

A. The TCEQ Regional Office shall be contacted as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting. The notice shall include:

(1) Date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Procedure used to determine turbine loads during and after the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have EPA approval shall be submitted to the TCEQ Air Permits Division.

B. Air contaminants and diluents to be sampled and analyzed from EPN CTHRSG8 include (but are not limited to) NO_x, CO, VOC, SO_2, NH_3, sulfuric acid, opacity,

particulate matter (filterable and condensable), and O_2. Air contaminants to be sampled and analyzed from EPN SCRUB include (but are not limited to) VOC and NH_3. Fuel sampling using the methods and procedures of 40 CFR § 60.4415 or 40 CFR § 60.4365(a) may be conducted for monitoring SO_2.

C. The turbine shall be tested at the maximum load for the atmospheric conditions which exist during testing. The tested turbine load shall be identified in the sampling report. The permit holder shall present at the pretest meeting the manner in which stack sampling will be executed in order to demonstrate compliance with emission standards found in 40 CFR Part 60, Subpart KKKK.

D. Sampling as required by this condition shall occur within 60 days after achieving the maximum production rate at which the turbine will be operated, but no later than 180 days after initial startup of each unit. Additional sampling may be required by the TCEQ or EPA.

E. Within 60 days after the completion of the testing and sampling required herein, two copies of the sampling reports shall be distributed as follows:

(1) One copy to the TCEQ Air Permits Division in Austin.

(2) One copy to the TCEQ Regional Office.

Continuous Determination of Compliance

20. The permit holder shall install, calibrate, operate, and maintain a CEMS to measure and record the concentrations of NO_x, CO, and diluent (O_2 or carbon dioxide) from the exhaust stack of EPN CTHRSG8. In addition, the permit holder shall install, calibrate, operate, and maintain a CEMS to measure and record the concentrations of NO_x, SO_2, and diluent from the exhaust stack of EPN SCRUB.

A. Monitored NO_x and CO concentrations for EPN CTHRSG8 shall be corrected and reported in dimensional units corresponding to the emission rate and concentration limits established in this permit. Monitored NO_x and SO_2 concentrations for EPN SCRUB shall be corrected and reported in dimensional units corresponding to the emission limits established in Permit Numbers 7704 and PSDTX234M2.

B. The CEMS data for EPN CTHRSG8 shall be used to demonstrate compliance with the NO_x and CO emission limits in Special Condition No. 6 and the MAERT. The CEMS data for EPN SCRUB shall be used to demonstrate compliance with the NO_x and SO_2 emission limits in Permit Numbers 7704 and PSDTX234M2. A valid hour consists of a minimum of 4, and normally 60, approximately equally-spaced data points.

C. The NO_x/diluent CEMS for EPN CTHRSG8 shall be operated according to the methods and procedures as set out in 40 CFR § 60.4345. The NO_x, SO_2, and diluent CEMS for EPN SCRUB shall be operated according to the methods and procedures as set out in 40 CFR § 60.49Da.

D. The CO CEMS shall meet the appropriate quality assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Each CO monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters if four successive quarterly CGA have been conducted for that four-quarter period. An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur at least two months apart.

E. Reporting of monitoring data for demonstrating compliance with NSPS Subpart KKKK and this permit for EPN CTHRSG8 shall be conducted in accordance with the methods and procedures as set out in 40 CFR § 60.4380(b). Reporting of monitoring data for demonstrating compliance with NSPS Subpart Da and this permit for EPN CTHRSG8 shall be conducted in accordance with the methods and procedures as set out in 40 CFR § 60.51Da.

F. Compliance with the NO_x/diluent or NO_x, SO_2, and diluent continuous emissions monitor requirements above can be demonstrated by meeting the requirements of 40 CFR Part 75 provided that the permit holder demonstrates compliance with applicable NSPS regulations.

G. The TCEQ Regional Office shall be notified at least 21 days prior to any required relative accuracy test audit in order to provide them the opportunity to observe the testing.

21. The NH_3 concentration from the exhaust stacks (EPNs CTHRSG8 and SCRUB) shall be tested or calculated according to one of the methods listed below and shall be tested or calculated according to frequency listed below. Testing for NH_3 slip is only required on days when the selective catalytic reduction (SCR) unit is in operation.

A. The permit holder may install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of NH_3. The NH_3 concentrations shall be corrected and reported in accordance with Special Condition No. 6. Each ammonia CEMS shall be audited at least once each calendar quarter.

B. As an approved alternative, the NH_3 slip may be measured using a sorbent or stain tube device specific for NH_3 measurement in the 5 to 10 ppm range. The frequency of sorbent/stain tube testing shall be daily for the first 60 days of operation, after which, the frequency may be reduced to weekly testing if operating procedures have been developed to prevent excess amounts of urea from being introduced in the SCR unit and when operation of the SCR unit have

been proven successful with regard to controlling NH_3 slip. Daily sorbent or stain tube testing shall resume when the catalyst is within 30 days of its useful life expectancy. These results shall be recorded and used to determine compliance with Special Condition No. 6.

If the sorbent or stain tube testing indicates an ammonia slip concentration exceeds 10 ppm for a consecutive one-hour period or the average of one or more sorbent or stain tube tests in an hour, the permit holder shall begin NH_3 testing by either the Phenol Nitroprusside Method, the Indophenol Method, or the EPA Conditional Test Method (CTM) 27 on a quarterly basis, in addition to the weekly sorbent of stain tube testing. The quarterly testing shall continue until such time as the SCR unit catalyst is replaced; or if the quarterly testing indicates NH_3 slip is 7 ppm or less, the Phenol-Nitroprusside/Indophenol/CTM 27 tests may be suspended until sorbent/stain tube testing again indicate 10 ppm NH_3 slip or greater. These results shall be recorded and used to determine compliance with Special Condition No. 6.

C. As an approved alternative to sorbent or stain tube testing, NH_3 CEMS, or a second NO_x CEMS, the permit holder may install and operate a dual stream system of NO_x CEMS at the exit of the SCR. One of the exhaust streams would be routed, in an unconverted state, to one NO_x CEMS, and the other exhaust stream would be routed through a NH_3 converter to convert NH_3 to NO_x and then to a second NO_x CEMS. The NH_3 slip concentration shall be calculated from the difference between the two NO_x CEMS readings (converted and unconverted). These results shall be recorded and used to determine compliance with Special Condition No. 6.

D. Any other method used for measuring NH_3 slip shall require prior approval from the TCEQ.

22. The permit holder shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the average hourly natural gas consumption of the CT. The permit holder shall comply with the initial certification and quality assurances as specified in 40 CFR Part 75, Appendix D.

Cooling Towers

23. The Cooling Tower (EPN COOLTWR8) shall not exceed a total dissolved solids (TDS) concentration of 4,400 parts per million by weight (ppmw).

A. A conservative default conversion factor of 0.80 (conductivity to TDS) may be used initially until a site specific demonstrated value is determined.

B. The permit holder shall perform sampling to establish the conductivity to TDS conversion factor that shall be used by the permit holder to demonstrate compliance in accordance with paragraph A above. A minimum of three cooling

water samples shall be collected and a conductivity and TDS analysis performed for each of the three samples in order to establish the actual cooling water conductivity to TDS conversion factor. The conductivity and TDS analyses shall be performed in accordance with "Standard Methods for the Examination of Water and Wastewater" Method 2510 (Conductivity) and Method 2540 (Solids). An average conversion factor and standard deviation based on the three values shall be determined from the cooling water sample results.

C. A copy of the sampling report shall be kept on site.

D. Continuous compliance with the hourly and annual particulate matter emission rates for the Cooling Towers in the MAERT shall be demonstrated by the permit holder by monitoring the conductivity of the cooling water at a monitoring point in the recirculating water of each cooling tower, and recording these conductivity readings on a no less than weekly basis. Monitoring may be performed in any manner that produces accurate results. Each conductivity measurement shall be converted to TDS concentration in ppmw using the conductivity to TDS conversion factor established in accordance with paragraph B above.

E. The monitoring data required by this special condition shall be kept on site. These records shall include:

(1) Location of the monitoring point for the cooling tower recirculating water and date and time of monitoring.

(2) Weekly measured conductivity in ohms and the equivalent TDS in ppmw in the recirculating water of the cooling tower.

Nonattainment New Source Review (NNSR) - Emission Reductions

24. The permit holder shall comply with the following NNSR emission reductions:

A. The permit holder shall provide total offsets equivalent to 48.93 tons per year (tpy) of NOx, based on 37.64 tpy of NO_x authorized, at an offset ratio of 1.3:1, prior to the start of operation of the equipment authorized under this permit.

B. The permit holder shall provide total offsets equivalent to 67.38 tpy of VOC, based on 51.83 tpy of VOC authorized, at an offset ratio of 1.3:1, prior to the start of operation of the equipment authorized under this permit.

C. Based on the rules under 30 TAC § 101.372(a) and the TCEQ and EPA approved NO_x to VOC 1:1 inter-pollutant ratio, a total of 2,022.0 tons of NO_x discrete emission reduction credits (DERCs) will be set aside from DERC Certificate D-2932 to satisfy the 1.3:1 VOC offset requirement for a 30-year period. If the TCEQ establishes a different NO_x to VOC ratio in the future, the permit holder may submit a request to alter this permit and revise the 1:1 ratio. Any request to

revise the ratio must receive approval from the TCEQ and the EPA. Any final change to the 1:1 ratio would not be applicable to DERCs already used at a 1:1 ratio and would thus be prospective only in nature. Any DERCs set aside based upon the 1:1 ratio that are no longer needed to satisfy the VOC offset requirement if the ratio is revised will be returned to the permit holder for future use. Future rulemaking may affect the value and/or potential use of any returned credits.

D. A total of 339.0 tons of NO_x DERCs will be set aside from DERC Certificate D-2932 to satisfy the 0.3:1 portion of the NO_x offset requirement for a 30-year period.

E. The remaining 1:1 portion of the NO_x offset requirement will be satisfied through the use of emission reduction credits (ERCs), DERCs, and/or participation in the Mass Emissions Cap and Trade (MECT) Program. If participation in the MECT program is used for any part of the 1:1 portion of the offset, at the beginning of the MECT compliance period in which a source will commence operation and at the beginning of each MECT compliance period after that, the permit holder must have sufficient MECT allowances to cover the potential to emit of that source or the portion of the potential to emit being offset through participation in the MECT program.

F. The 1:1 inter-pollutant ratio and DERCs set aside from DERC Certificate D-2932 for the NO_x and VOC offset requirement will remain valid and available for use for a 30-year period. The permit holder must acquire additional offsets if the operation of the facility exceeds 30 years.

Recordkeeping Requirements

25. The following records shall be kept at the plant for the life of the permit and shall be made available upon request by representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:

A. A copy of this permit.

B. The permit application dated September 19, 2011 and subsequent representations submitted to the TCEQ.

C. A complete copy of the testing reports and records of the initial performance testing completed pursuant to Special Condition No. 19 to demonstrate initial compliance.

D. Stack sampling results or other air emissions testing (other than CEMS data) that may be conducted on units authorized under this permit after the date of issuance of this permit.

26. The following information shall be maintained by the permit holder in a form suitable for inspection for a period of five years after collection and shall be made available upon request by representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:

A. The CEMS data of NO_x, CO, and diluent emissions from EPN CTHRSG8 to demonstrate compliance with the emission limits in the MAERT and Special Condition No. 6. The CEMS data of NO_x, SO_2, and diluent emissions from EPN SCRUB to demonstrate compliance with the emission limits in Permit Numbers 7704 and PSDTX234M2.

B. Raw data files of all CEMS data including calibration checks, adjustments, and maintenance performed on these systems in a permanent form suitable for inspection.

C. Records of hours of operations on a rolling 12-month basis for the Emergency Generator to demonstrate compliance with Special Condition No. 8.

D. Records of sulfur analysis of natural gas pursuant to Special Condition No. 9.

E. Records of visible emission/opacity observations and date and description of corrective actions taken pursuant to Special Condition No. 10.

F. Records of NH_3 AVO checks and corrective actions pursuant to Special Condition No. 13.

G. Records as specified in Special Condition No. 14 for piping, valves, pumps, agitators, and compressors.

H. Records of planned MSS activities pursuant to Special Condition Nos. 16-17, including the date, time, and duration of those activities, emissions from those activities, and periods when CEMS data have been excluded for purposes of demonstrating compliance with Special Condition No. 6.

I. Records of NH_3 monitoring or testing pursuant to Special Condition No. 21.

J. Records of sampling and monitoring of the cooling tower water pursuant to Special Condition No. 23.

Reporting

27. The permit holder shall submit to the TCEQ Regional Office and the Air Enforcement Branch of EPA in Dallas reports as described in 40 CFR § 60.7. Such reports are required for each emission unit which is required to be continuously monitored pursuant to this permit.

Date: December 21, 2012

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 98664, PSDTX1268, and N138

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
CTHRSG8	Combustion Turbine and HRSG with Duct Burner (GE 7EA, ~ 80 MW) (5)	NO_x	9.36	37.63
		NO_x (MSS)	52.00	--
		CO	25.66	102
		CO (MSS)	450	--
		VOC	3.26	12.88
		VOC (MSS)	15.50	--
		PM	16.58	71.70
		PM_{10}	16.58	71.70
		$PM_{2.5}$	16.58	71.70
		SO_2	1.75	6.92
		H_2SO_4	0.62	2.44
		NH_3	8.67	34.20
COOLTWR8	Cooling Tower	PM	1.10	4.82
		PM_{10}	0.39	1.69
		$PM_{2.5}$	<0.01	0.01
SCRUB	Enhanced Scrubber	VOC	24.53	38.37
		NH_3	1.35	5.70

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
EMGEN8	Emergency Generator (217 horsepower)	NO_x	1.42	0.01
		CO	1.25	0.01
		VOC	1.42	0.01
		PM	0.07	<0.01
		PM_{10}	0.07	<0.01
		$PM_{2.5}$	0.07	<0.01
		SO_2	0.44	<0.01
MEAFUG	MEA Fugitives (6)	VOC	0.02	0.08
NGFUG	Natural Gas Fugitives (6)	VOC	0.11	0.49
NH3FUG	Ammonia Fugitives (6)	NH_3	0.02	0.08

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
H_2SO_4 - sulfuric acid
NH_3 - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) The planned maintenance, startup, and shutdown (MSS) pounds per hour (lbs/hr) emission limits apply only during each clock hour that includes one or more minutes of MSS activities. During all other clock hours, the normal operations lbs/hr emission limits apply. The tpy emission limit for this facility includes emissions from the facility during both normal operations and planned MSS activities.
(6) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: December 21, 2012